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COMMON PERCEPTIONS OF CIVILIAN  
CASUALTIES FROM BOMBING

by

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## *Preface*

This paper addresses one of the central issues concerning the employment of airpower, an issue present since the emergence of airpower as a factor in warfare. Many of the early airpower theorists and commentators of the 1920s and 1930s postulated that extremely heavy civilian casualties would necessarily result from aerial bombing in future wars. Formulae to predict the casualties per ton of bombs were created and influenced the strategic policies of several nations before World War II.

In general the events of the 1930s and 1940s, from the Spanish Civil War through World War II, proved these predictions of casualties from aerial warfare to be grossly exaggerated. Nevertheless, various incidents of aerial bombardment resulted in inaccurate and exaggerated perceptions of the effect of air bombardment on civilians. Because of ensuing civilian casualties, aerial bombing has therefore been long regarded as an especially brutal form of warfare. The perception that massive civilian casualties necessarily result from aerial bombing has persisted from World War II to the present.

I intend to examine this phenomenon, as well as the reasons why civilian casualties have been inflated in the past, and are likely to continue to be inflated in the future. Additionally, I will propose some ways in which the perception and the expectation of civilian casualties is likely to affect future operations.

I would like to thank my faculty advisor, Col. Steve Chiabotti, for providing me with consistently good advice while I researched and wrote this paper.

### ***Abstract***

One of the major issues in the history of airpower has been the affect that aerial bombardment has had upon the civilian population. This thesis examines the very common perception that aerial bombardment necessarily causes very heavy civilian casualties. From the early days of airpower this has been one of the primary assumptions of military theorists, politicians and the press.

In fact, this thesis makes the case that, for a variety of reasons, the civilian casualties caused by air bombardment has been consistently overstated. From the 1930s to the present, the effect of airpower to produce casualties has been overestimated out of the ignorance of the press and the common perceptions of airpower. In some cases, the civilian casualties caused by air attack have been deliberately overstated in order to make a propaganda point.

Recent conflicts such as the Gulf War demonstrate that the perceptions of heavy civilian casualties remain even if great care is taken to limit collateral damage in an air campaign. The recent wars show us that the deliberate falsification of civilian casualties from air bombardment is likely to remain as a major propaganda theme.

## **Chapter 1**

### **The Genesis of the Concept**

Civilian casualties have always been a factor in war. Blockades and sieges have traditionally taken a heavy toll among the civilian population. However, when airpower appeared as a major new factor in warfare during World War I, it appeared that civilians far behind the fighting front were more vulnerable than ever before. Now civilians deep in their own homeland could suffer attack from the air with little or no warning.

Both the Germans and the British conducted strategic bombing campaigns against each others' major cities during World War I. The actual results for both the German and British efforts were fairly insignificant. In 1915-1916 the World's first strategic bombing campaign was unleashed when German Zeppelin airships bombed London and other British cities. In the course of two years the Germans dropped 175 tons of bombs on England and killed 500 Englishmen, virtually all civilians.<sup>1</sup> In 1917-1918 the German Luftstreitkräfte mounted a much more serious campaign against London, this time with heavy Gotha and Riesen bombers which were capable of carrying up to a ton of bombs each. By May 1918, the Germans had mounted 27 raids on English cities, inflicted 2,807 casualties and caused 1.5 million pounds sterling damage.<sup>2</sup> Aside from some minor panics set off in London during the early period of the bombing raids and some absenteeism in the factories, the English population and economy were scarcely affected

by the strategic bombing campaign. The combination of heavy German losses were heavy and small damage inflicted forced the German High Command to call off the attacks.

During 1918 the British mounted a strategic bombing campaign against the German cities of the Ruhr and Western Germany. The results were even more disappointing than the German strategic bombing campaign. From June to November 1918, the RAF's Independent Air Force, their heavy bomber force, dropped 543 tons of bombs on German cities and inflicted total casualties of 797 dead and 380 wounded with 15 Million Reichsmarks worth of damage. As with the bombing of Britain, this was not a serious blow to the civilian population or economy.<sup>3</sup> Again, the price paid by the attacking force was heavy. The RAF lost 353 aircraft badly damaged or destroyed and had 29 aircrew killed, 64 wounded and 235 missing as a result of their bombing missions. In short, the British traded a large number of expensive aircraft and trained aircrew in order to kill a few German civilians and inflict minimal damage.<sup>4</sup> It was not an auspicious beginning for the concept of strategic bombing.

Despite the poor showing of the strategic bombing campaigns of 1915-1918, the air officers of the major powers were not discouraged about the future role of aviation as a decisive, war-winning weapon. The World War had witnessed enormous strides in aviation technology and the postwar era saw aviation technology continue to develop quickly. It was not long before airpower-oriented theories of war became popular.

The best-known and most influential aviation theorist of the interwar period was the Italian airman, General Giulio Douhet. Douhet had been involved in aviation before the World War as the commander of Italy's first aviation battalion. After the war, Douhet



became the first Minister of Aviation in Mussolini's Fascist government. In 1921, he published his most famous work on aviation theory, *The Command of the Air*.<sup>5</sup> Douhet would revise his work in 1927 and until his death in 1930 would also expound his aviation theories in detail in the Italian Air Force journal, *Revista Aeronautica*.<sup>6</sup> At the core of Douhet's writings lay the concept that the strategic bomber striking the enemy homeland would prove to be the decisive weapon of future wars. Large bomber forces would, at the outset of the war, directly attack the primary cities of the enemy state and cause such devastation and social disruption that the enemy state would be quickly brought to its knees. Civilian casualties from the air war would be heavy, but the short duration of the war would actually ensure a more humane solution by gaining a decisive outcome with only tens of thousands of casualties (mostly civilians) rather than the millions of dead soldiers of the World War. In a 1927 article "The Air War of 19\_\_" Douhet illustrated his basic theory with a description of a future war between France and Germany. At the outset of the war, the Germans used their large bomber force to lay waste to French cities. Within a matter of days, heavy casualties had been inflicted upon the French civilians and the French morale shattered. By bombing the French cities, Douhet postulated, the Germans could defeat France in a matter of a couple of weeks.<sup>7</sup>

Douhet's theory of aerial warfare was extremely popular among the military airmen of the major powers. Douhet was known his works partially translated in the US Army Air Corps in the early 1920s. Discussion of Douhet first appeared in France in 1927 in *Revue Maritime*.<sup>8</sup> By the early 1930s, Douhet was translated into French,<sup>9</sup> and French officers were publishing books and articles supporting Douhet's theories.<sup>10</sup> Douhet was popular in Germany as well by the late 1920s with the Reichswehr's secret air staff

requesting a report on Douhet from their unofficial air attaché to Italy, Captain Wolfram von Richthofen (future Luftwaffe Field Marshal), as Douhet was “well-known and followed carefully in the journals.”<sup>11</sup>

Part of Douhet’s core theory was his formula expressing the destructive capability of bombs. He argued that a 100 kilogram bomb would destroy everything within a 50 meter radius. Therefore, a target 500 meters in diameter would require 10 tons of bombs to ensure total destruction. Since bombers of the day could carry perhaps two tons of bombs, one needed 5 aircraft to destroy a target 500 meters in diameter. To ensure destruction, Douhet doubled the figure and asserted that 10 aircraft could totally destroy this same target.<sup>12</sup>

It should be noted, however, that Douhet was not the only proponent of such linear airpower theories and formulas. He was the best-known and most comprehensive theorist of the era, but even before his ideas gained international currency, similar views were being openly expressed by the airmen of other nations. US Army Air Corps General Billy Mitchell, who wrote extensively on aviation for the popular press, in 1924 commented that aerial bombing was so destructive that the mere threat of bombing a city in the future would cause that city to be evacuated immediately.<sup>13</sup> In Britain there was a brief scare of a war with France in 1922. The French were proposing to double their air force to 2,000 aircraft and the RAF staff estimated that if the French should initiate a bombing campaign against London with half of their proposed air force, there would be 20,000 civilian casualties in just the first week of the war. The RAF developed a formula that assumed that each ton of bombs dropped on an urban area would result in 17 dead and 33 wounded.<sup>14</sup>

Douhet, Mitchell and the RAF staff were joined by a host of military theorists and commentators throughout the 1920s and 1930s in predicting a future war with massive civilian casualties caused by aerial bombardment. In 1925, one of the best known British military commentators of the day, Basil Liddell Hart, wrote a popular fictional account of a future war in which aerial bombing, using a combination of high explosive and poison gas bombs against major cities, would quickly decide a war.<sup>15</sup> This approach of arguing airpower theory by means of fiction was popular in Germany as well as in England. In 1932, Robert Knauss, a former Luftstreitkräfte officer and a senior manager with Lufthansa, wrote a Douhetist version of a future air war entitled *Luftkrieg 1936 Die Zertrümmerung von Paris (Air War 1936: The Destruction of Paris)*.<sup>16</sup> Knauss postulated an air war between France and Britain in the near future and had the British winning the war in a week by bombing Paris. In a few days, such heavy civilian casualties are inflicted that the French government is forced to sue for peace. Another German, General Erich Ludendorff (former Quartermaster General of the German Army in world War I), wrote a fictional account of the future face of war in 1931 which described a war of barbarous nature on both the ground and in the air in which heavy civilian casualties could be expected.<sup>17</sup> Ludendorff repeated these predictions in other military commentaries.<sup>18</sup> Another German commentator, General Max Schwarte, author of many historical works on the World War, staged a popular lecture series in 1928 where he argued that German cities were threatened with destruction in future conflicts due to the bomber forces of Germany's enemies: France, Poland and Czechoslovakia.<sup>19</sup>

This image of heavy civilian casualties in a future war so pervasive among the civilian populations of the major powers and the political leadership not only because of

the wide dissemination of the Douhet vision of airpower but because of the general credibility of the proponents of the view. The image of mass civilian casualties by bombing was not promoted by futurists or pure theorists. The men who so vividly described the horrors of future aerial warfare were all experienced military men who were among the most knowledgeable people on airpower capabilities in the world. The RAF Air Staff adopted a pessimistic estimate of civilian casualties in the early 1920s. Basil Liddell Hart, who also accepted this RAF view, was a former officer who served as the senior military correspondent for several newspapers. Liddell Hart was influential in military circles in Britain in the interwar period. Douhet was a general, a former commander of aviation forces and the Minister of Aviation when he wrote his book. General Mitchell had commanded the AEF Air Service in combat in the World War and had gained international attention by sinking the Ostfriesland by bombing in 1921. Robert Knauss was not only a former aviation officer, he also had a Ph.D. in economics and was fluent in French and English and followed international aviation issues closely. As a senior manager with Lufthansa he was one of the best informed men in Germany when it came to assessing the aviation capabilities of the day. General Schwarte was well known as one of the most critical and prolific commentators on the history of the World War and wrote extensively about the changes that technology had wrought in warfare.<sup>20</sup> In short, considering the sources, the public and the political leaders had every reason to accept the view that a future war would bring massive civilian casualties from aerial attack.

## **Guernica: The Predictions Confirmed.**

On 26 April 1937 perhaps the most famous conventional bombing raid of all time was carried out during the Spanish Civil War. On that day, Guernica, a Basque town and the center of Basque culture, was carpet-bombed by the German Luftwaffe force that was serving under the command of the Spanish Nationalist government. The bombing of Guernica was quickly turned into an event of mythical proportions and the version of events accepted by the public and the leadership of nations in Europe and America seemed to prove out all the worst predictions of civilian casualties that would result from aerial bombardment. Guernica was characterized as a “terror bombing” of innocent civilians conducted with the express purpose of slaughtering non-combatants and terrorizing the survivors into submission. The Basque government turned the bombing of Guernica into a major propaganda event and claimed that 1,654 civilians had been killed and 889 wounded in the attack.<sup>21</sup> The casualty claims and standard interpretation of the raid as a prelude to the terror bombing of civilians in World War II has persisted to this day in the popular and historical literature with little challenge.

The facts about the bombing of Guernica bear little resemblance to the myth. Guernica was a small town of 5,000-7,000 people that in April, 1937 was located close to the front lines. The German Condor legion targeted Guernica as a purely tactical operation. Guernica had a bridge and an important road intersection that was vital for the withdrawal of many of the 23 battalions of Basque army troops located east of Guernica and in the process of retreating to the fortified lines around Bilbao. The road intersection, two battalions of Basque troops stationed in the town, and concern by the Nationalists

advancing that the Basques might fortify the town tended to legitimize its selection as a target for aerial attack.<sup>22</sup>

The Germans attacked the town with 43 bombers and fighters and dropped between 40-50 tons of high explosive bombs and incendiaries, which destroyed half the town and inflicted heavy casualties. The raid was fairly typical of the Spanish Civil War. Due to the poor accuracy of bombers against point targets, the airmen found that villages made better targets. The rationale was set out in a Condor Legion report of 1938: “We have had notable results in hitting the targets near the front, especially in bombing villages which hold enemy reserves and headquarters. We have had great success because these targets are easy to find and can be thoroughly destroyed by carpet bombing.”<sup>23</sup> The Nationalist leadership was fairly sanguine about the tactic of bombing small towns near the front lines. Even the official Spanish histories of the Spanish Civil War contain photographs and accounts of the bombing of Loyalist-occupied towns by the Nationalist Air Force.<sup>24</sup>

Foreign correspondents writing for the *Times* of London and for the *New York Times* along with the representatives of the Basque government, however, quickly labeled the bombing of Guernica a “terror attack.” One correspondent wrote “...the object of the bombardment was seemingly the demoralization of the civil population and the destruction of the cradle of the Basque race.”<sup>25</sup> The story became more and more embellished. New York and London newspapers wrote extensively about the attack.<sup>26</sup> The New York Post printed a cartoon about Guernica showing mountains of civilian dead in ‘the Holy City of Guernica’ with Hitler standing over the ruined city with a bloody sword, which was captioned “air raids.”<sup>27</sup> The US *Congressional Record* even referred

to poison gas used at Guernica—an event that never occurred.<sup>28</sup> In the British Parliament, speeches were made denouncing the attack and inaccurately describing Guernica as an “open city” which contained no military targets.<sup>29</sup> The Basque government’s account of 1,654 dead and 889 wounded was accepted uncritically in the world press. Indeed, the impression was given that Guernica was a city instead of a small town and that the Luftwaffe of 1937 already possessed the capability of wiping whole cities off the map—something actually way beyond the capability of the German Air Force at that time. After all, the press had already been conditioned to expect the destruction of whole cities by air and the targeting of civilians would be a primary feature of a future war. It appeared that the future had arrived.

In Guernica, all of the major elements of this study come into premature, but nonetheless sharp, focus. The Basque and Spanish Republican governments had every motivation to exaggerate the civilian casualties at Guernica for propaganda effect. Indeed, the version of the attack that was disseminated made very powerful propaganda for the Republican cause. At the same time, the press, public, and political leadership were conditioned to accept inflated figures for civilian casualties. Yet another element is the persistence of the original story. Few historians have been interested in critically examining the events of Guernica, and decades later, the original figure of 1,654 dead is still cited in historical works.<sup>30</sup>

Yet, the official casualty figures at Guernica warrant a much closer examination. If the official figures are correct, then the Condor Legion’s bombing of Guernica resulted in approximately 41 fatalities per ton of bombs (1654 dead for approximately 40 tons of bombs). This is an astounding figure when one compares Guernica with the most

devastating aerial raids carried out in Europe in World War II. In the Hamburg raid of July 1943, the RAF dropped 4,644 tons of bombs to produce approximately 7.5 fatalities per ton of bombs.<sup>31</sup> In the American and British bombing against Dresden in February 1945 the Allied air forces dropped 3,431 tons of bombs to produce approximately 7.2-10.2 fatalities per ton of bombs.<sup>32</sup> In contrast to the bombing raids against cities in World War II, the Guernica casualty figures are simply unbelievable. At this point, it will never be possible to get an exact figure for the Guernica casualties as the Spanish Nationalists claimed that the town had never been attacked by air and that the Republicans had dynamited the town themselves as a propaganda ploy. This bit of foolishness was officially maintained during the entire tenure of Francisco Franco's forty-year regime and, presumably, Franco's secret police expunged any solid evidence (death certificates, hospital and church records etc.) of the bombing carried out under Nationalist orders. However, even a realistic estimate on the high side of bombing effectiveness (7-12 fatalities per ton of bombs) would yield a figure of perhaps 300-400 fatalities in Guernica. This is certainly a bloody enough event, but reporting that a small town was bombed with a few hundred killed would not have had the same effect as reporting that a city was bombed with almost 1,700 dead.

The reports of the bombing of Guernica had the effect of confirming the predictions of the airpower theorists concerning civilian casualties. In the French cabinet during strategy sessions in 1938, extravagant estimates were made of the German ability to inflict casualties among the French civilians by bombing.<sup>33</sup> French Air Force General Dentz predicted at the time of the Sudetenland crisis in 1938 that "French cities would be laid in ruins."<sup>34</sup> A French cabinet member said of possible German aerial bombardment,



“Our towns will be wiped out, our women and children slaughtered.”<sup>35</sup> During the Munich Crisis of 1938, fully one third of the population of Paris evacuated the city to avoid possible German air bombardment.<sup>36</sup>

In Britain during the years before World War II, the attitudes and estimates of the effects of aerial bombardment were much the same. British scientist Lord J.B.S. Haldane wrote a book on air raid defense in 1938 that postulated a formula of twenty fatalities for every ton of bombs dropped on London. He predicted that a German bombing force of 270 aircraft could drop 400 tons of bombs and probably kill 8,000 people and wound another 15,000. He pointed out that this could be done several times a day and that the “knockout blow” from the air might kill 50,000 to 100,000 Londoners.<sup>37</sup> The RAF staff told the government in the 1930s to expect 20,000 casualties a day if the Germans attacked.<sup>38</sup> By the outbreak of the war, the British government planned to provide 750,000 hospital beds for expected casualties. In fact, even in the worst days of the Blitz, no more than 6,000 beds were ever required.<sup>39</sup> As Harold MacMillan later remarked about the perceptions of that era, “ We thought of air warfare in 1938 as people think of nuclear warfare today.”<sup>40</sup>

### Notes

<sup>1</sup> David Divine, *The Broken Wing: A Study in the British Exercise of Air Power*. London: Hutchinson (1966), p. 103.

<sup>2</sup> Raymond Fredette, *The Sky on Fire: The first Battle of Britain , 1917-1918*. NY: Holt, Rinehart and Winston (1966), p. 196.

<sup>3</sup> Reichswehr Air Organization Office, *Letter by Truppenamt Luftreferant 4.2.27 on Losses in the German Home Area to Enemy Bombers* (Feb. 4 1927), in BA/MA RH 12-1/53.

<sup>4</sup> David Divine, *The Broken Wing*, pp. 142-143.

<sup>5</sup> Giulio Douhet, *The Command of the Air*. NY: Arno Press (revised 1927; reprint 1972).

## Notes

<sup>6</sup> The *Revista Aeronautica* was one of the best aviation journals of this era. It published numerous articles by Douhet in the 1920s as well as articles from other airpower thinkers, such as Captain Amadeo Mecozzi, who opposed Douhet's theories.

<sup>7</sup> "The Air War of 19\_\_" is translated and reproduced in Giulio Douhet, *The Command of the Air*.

<sup>8</sup> Col. P. Vauthier, *La Doctrine de Guerre du General Douhet*. Paris: Berger-Levrault (1935), p. 166.

<sup>9</sup> The French journal *Les Ailes* translated much of *The Command of the Air*. See Frank Capellati, *The Life and Thought of Giulio Douhet*. Ph.D. Diss. Rutgers University (1967), p. 230.

<sup>10</sup> See Lt. Col. P. Vauthier, *Le Danger Aerien du Pays*. Paris: Berger-Levrault (1930).

<sup>11</sup> See Reichswehr Air Staff Correspondence in MA/DDR, R 06 10/4, p. 305.

<sup>12</sup> Phillip Meilinger, "Giulio Douhet and the Origins of Airpower Theory," in *The Paths of Heaven: The Evolution of Airpower Theory*, ed. Phillip Meilinger. Maxwell AFB: Air University Press (1997), p. 21.

<sup>13</sup> William Mitchell, "Aeronautical Era," *The Saturday Evening Post* (20 December 1924), p. 3.

<sup>14</sup> See Phillip Meilinger, "Trenchard, Slessor and Royal Air Force Doctrine Before World War II," in *The Paths of Heaven*, p. 50.

<sup>15</sup> Basil Liddell Hart, *Paris: The Future of War*. London: K. Paul, Trench, Trubner and Co. (1925).

<sup>16</sup> Major Hoelders (pen name for Robert Knauss), *Luftkrieg 1936: Die Zertrümmerung von Paris*. Berlin: Verlag Tradition Wilhelm Kolk (1932).

<sup>17</sup> Erich Ludendorff, *The Coming War*. London: Faber and Faber (1931).

<sup>18</sup> Erich Ludendorff, *Der Totale Krieg*. Munich: Ludendorff's Verlag (1935), translated into English as *The Nation At War*. London: Hutchinson (1936).

<sup>19</sup> Gen. a.D. Schwarte, *Vortrag*, BA/MA 12-1/53.

<sup>20</sup> General Max Schwarte's best-known books include *Die militärischen Lehren des grossen Krieges*, Berlin: Verlag Offene Worte (1920), (*The Military Lessons of the Great War*), and *Die Technik im Zukunftskriege*, (*Technology in the War of the Future*), Berlin: Verlag Offene Worte (1923).

<sup>21</sup> Hugh Thomas, *The Spanish Civil War*. NY: Harper and Row (1961), p. 419.

<sup>22</sup> For detailed information on the Guernica attack, see Gordon Thomas and Max Witts, *Guernica: The Crucible of World War II*, NY: Stein and Day (1975); Hans-Henning Abendroth, "Guernica: Ein fragwürdiges Symbol," in *Militärgeschichtliches Mitteilungen* (1/1987), pp. 111-26; and James Corum, *The Luftwaffe: Creating the Operational Air War 1918-1940*, Lawrence: University Press of Kansas (1997), pp. 198-200.

<sup>23</sup> Condor Legion, Daily Report of 11 February 1938, in BA/MA RL 35/4.

<sup>24</sup> Manuel Azner, *Historia Militar de la Guerra de Espana*, vol. I, Madrid: Editoria nacional (1958), p. 302 (Bombing of Brunete) and p. 304 (Bombing of Azuara). See also Estado Mayor del Ejercito, *Historia Militar de la Guerra de Espana*, vol. III, Madrid: Altmira S.A. (1963), p. 82 (photo of Alcubierre).

## Notes

<sup>25</sup> Account of George Steer of the *London Times*, cited in Peter Wyden, *The Passionate War: The Narrative History of the Spanish Civil War*, NY: Simon and Schuster (1983), pp. 357-358.

<sup>26</sup> *The London Times* covered the accounts of the Guernica attack in detail, every day, for more than 10 days after the attack.

<sup>27</sup> Cited in Allen Guttman, *The Wound in the Heart: America and the Spanish Civil War*, NY: Free Press (1962), p. 106.

<sup>28</sup> *Ibid.*, p. 108.

<sup>29</sup> Report of Parliamentary Debates, *London Times* (27 April 1937), p. 7.

<sup>30</sup> Some examples of the acceptance of the Guernica casualty figures are to be found in Alan Stephens, "The True Believers: Air Power Between the Wars," in *The War in the Air 1914-1994*, ed. Alan Stephens, RAAF: Canberra (1994), p. 61, and James Stokesbury, *A Short History of Airpower*, NY: William Morrow and Co. (1986), p. 146. On the sixtieth anniversary of the bombing of Guernica, the German government issued an official apology to Spain for having killed "over 1,000 civilians at Guernica," cited in Walter Haubrich, "Nur die Eiche Steht—Guernica Gedenkt des deutschen Bomberabwurfs von 1937," in *Frankfurter Allgemeine Zeitung* (26 April 1997).

<sup>31</sup> Martin Middlebrook and Chris Everitt, *The Bomber Command War Diaries*. London: Penguin Books (1990), pp. 413-414.

<sup>32</sup> *Ibid.*, pp. 663-664.

<sup>33</sup> George Quester, *Deterrence Before Hiroshima*. Oxford: Transaction Books (1986), p. 96.

<sup>34</sup> *Ibid.*, p. 97.

<sup>35</sup> *Ibid.*

<sup>36</sup> *Ibid.*, p. 98.

<sup>37</sup> Robin Cross, *The Bombers*. NY: Macmillan (1987), p. 92.

<sup>38</sup> Alan Stephens "The True Believers," p. 60.

<sup>39</sup> Charles Webster and Noble Frankland, *The Strategic Air Offensive Against Germany*, vol. 1. London: HMSO (1961), p. 184.

<sup>40</sup> Richard Overy and Andrew Wheatcroft, *The Road to War: the Origins of World War II*. London: MacMillan (1989), p. 304.

## **Chapter 2**

### **Civilian Casualties In World War II.**

Despite the dire predictions of the prewar airpower theorists and the government leaders, aerial bombardment in World War II proved to be far less lethal than expected. The prewar formulas developed by Douhet (17 fatalities per ton of bombs) and Haldane and the RAF Staff (20 dead per ton) proved to be overstated by a factor of twenty.

During the course of World War II, the British and American air forces dropped a total of 542,554 tons of bombs aimed specifically at German cities.<sup>1</sup> For the whole of World War II, the US Strategic Bombing Survey (USSBS) estimated that 422,000 German civilians had been killed by Allied bombing.<sup>2</sup> By adding rough estimates of foreign laborer casualties and counting all the “missing” air raid victims as dead, it is possible to come to a high estimate of 500,000 civilians in Germany killed by aerial bombardment.<sup>3</sup> Under the low and high estimates, the Allied bombing campaign in Germany resulted in a casualty ratio of .8 to 1.0 deaths per ton of bombs dropped.

One finds similar ratios of dead to bomb tonnage in the other major bombing campaigns of the war. During the course of the war, the German Air Force dropped a total of 67,000 tons of bombs and missiles on Great Britain.<sup>4</sup> This bombing campaign resulted in a total of 60,595 British deaths, just under one civilian death per ton of bombs.<sup>5</sup>

In the Pacific War, the US forces dropped a total of 160,800 tons of bombs on the Japanese homeland in 1944-1945.<sup>6</sup> The USSBS survey also estimated that a total of 210,000 Japanese were killed by aerial bombardment for a casualty ratio of 1.3 fatalities per ton of bombs.<sup>7</sup> It is estimated that a further 120,000 people were killed in the atomic bombings of Hiroshima and Nagasaki for a grand total of 330,000 Japanese fatalities attributed to bombing.

One ought not to minimize the suffering inflicted upon the civilian populations by aerial bombardment. However, it is also important to put the civilian bombing casualties in perspective. The total estimated fatalities caused by aerial bombing in Britain, Germany and Japan amount to approximately 990,000 dead. This is a considerably lower figure than the estimated deaths by starvation alone in Leningrad and its suburbs during the epic siege of 1941-1944. In this one city, an estimated 1-2 million people died of starvation.<sup>8</sup> It is the common perception that aerial bombardment is especially hard on civilian populations, and thousands of books have been written about the sufferings of the civilians under aerial bombardment in World War II. However, a siege that took far more civilian lives receives light treatment in the history of the war. Perhaps the highly technological nature of killing by air bombardment grants it a greater dramatic aura and stimulates the public interest more than the ancient and more deadly tactics of siege and starvation.

Since the public and press were already well-conditioned to expect heavy casualties from bombing at the start of the World War, a good many instances of notable casualty inflation took place during the war. The public and press were ready to believe even scarcely-believable figures. Indeed, the persistence of inaccurate casualty figures for

bombing raids long after the end of the war is a remarkable testimony to these ingrained attitudes. The many inaccurate casualty statistics that gained currency during and after the war have continued to reinforce the public perceptions about bombing. In some cases, the casualty figures were deliberately inflated in order to gain propaganda points. The nation that was bombed would, in some cases, inflate casualty figures in order to paint the aerial attacker as the ruthless slaughterer of innocent women and children. In other cases, governments and historians have inflated casualty statistics in order to further a political agenda—either to paint oneself as the victims of aggression or as a means of denouncing the motives and policies of the bomber. In this chapter, I will examine a few of the most significant cases of casualty inflation.

### **Rotterdam.**

On 14 May 1940, the Wehrmacht's ground forces were striving to break through the Dutch defense lines that shielded Western Holland—known as 'Fortress Holland.' Withdrawing their forces behind this line and holding out for Allied aid was the basic Dutch strategy. The German objective was to break through the Fortress Holland line as quickly as possible in order to force the surrender of the Dutch. On the 14th of May, Rotterdam was on the front line of the German advance and the hinge of the Dutch defensive line. As German troops attacked the city, the Luftwaffe was ordered to bomb it in order to break the resistance of the Dutch Army defenders.<sup>9</sup>

Under the threat of bombardment, the Dutch Army commander in Rotterdam agreed to surrender the city. However, communications problems resulted in part of the attacking bomber force not getting the word. A force of 50 -plus German bombers

dropped approximately 115 tons of bombs on Rotterdam, inflicting heavy damage to the city and causing many civilian deaths.<sup>10</sup>

Rotterdam was a defended city on the front lines. Under the rules of war, it was a legitimate tactical military target. As in Guernica, a few hundred unfortunate civilians had found themselves in the path of a military operation and lost their lives. However, the Dutch government immediately characterized the bombing of Rotterdam as “terror bombing” carried out in order to kill civilians. The Netherlands Embassy in the UK gave out a figure of 30,000 civilians killed in Rotterdam. The bombing of Rotterdam became a major propaganda issue for the Netherlands government in exile, and the international press accepted the official numbers and account uncritically. The day after the bombing, the *London Times* carried the headline “ Rotterdam: A City in Ruins: 30,000 Killed by German Bombs.”<sup>11</sup> The figure of 30,000 was accepted throughout the Allied nations during the war as the official casualty account in Rotterdam. Only after the war was an accurate fatality figure of 980 deaths established.

The bombing of Rotterdam illustrates the staying power of inflated casualty figures. Even though the facts about the bombing of Rotterdam were revealed in detail after the war, in the historical literature the bombing of Rotterdam is still commonly referred to as a “terror bombing” decades after the event.<sup>12</sup> Indeed, the 1940 propaganda figure, long discredited, could still be found in airpower history works two decades after the event.<sup>13</sup> Evidently, the power of a statistic, once published, seems so strong that many historians failed even to question how 115 tons of bombs could inflict an astounding 30,000 casualties: 260 fatalities per ton of bombs.

## **Dresden.**

The bombing of Dresden by the British and American air forces on 13-14 February 1945 has become one of the most celebrated demonstrations of the cruelty of aerial bombardment. During those two days in 1945, the Allies dropped 3,431 tons of bombs on Dresden, a medium-sized German city that contained a railyard that had long been on the Allied target lists.<sup>14</sup> By all accounts, the raid was indeed a cruel blow to the German population and, according to the current estimates, between 25,000 and 35,000 civilians were killed in the raid.

At the time, the Allied bombing became a propaganda issue and the German Radio made much of the raid in the last weeks of the Third Reich - characterizing the attack as a “terror raid” against a city that had no military value. However, it was after World War II that the casualty figures for Dresden saw a dramatic inflation. The story of the Dresden raid became a popular feature in the propaganda of the Soviet Block nations as it illustrated the ruthless disregard that the Western capitalists had for the fundamental rules of war.<sup>15</sup> In the West, Dresden was used as an example to point out that the Western Powers had committed acts equivalent to, or worse than, some of the acts of Hitler’s Third Reich. For the pacifists, Dresden proved that all war is intrinsically cruel and that even soldiers fighting for an allegedly just cause can sink quickly to the same levels as their opponents. In any case, there were several motivations for historians and authors to prefer inflated casualty figures for Dresden.

David Irving in his book *The Destruction of Dresden* (1965) argued that 135,000 German civilians had been killed in the Dresden raid.<sup>16</sup> For many years, this extreme



figure has been uncritically accepted as accurate—especially by those who wish to make a case for the brutality of Allied bombing in the World War.<sup>17</sup>

### **The Bombing of Japan.**

An episode that never fails to instill an emotional response on the issue of civilian casualties is the atomic bombing of Hiroshima and Nagasaki in August 1945. The idea that a single bomb could destroy an entire city still boggles the mind. When these first atomic weapons were used, America had little idea about the effects and capabilities of these weapons. So, in the immediate aftermath of the Japanese surrender, the United States Strategic Bombing Survey sent large teams of technical and medical experts to Hiroshima and Nagasaki to assess the damage and casualties. The intent was to study the results of the atomic bombing in detail in order to build up a base of knowledge about the new weapons.

The Strategic Bombing Survey teams, as part of the occupying forces, had full access to all Japanese government, military and medical records. They had the authority to collect information from anyone in Japan. By 1946, the Strategic Bombing Survey had produced several volumes on the effects of the atomic bombings and concluded that of the 245,000 people in Hiroshima on August 6, 1945, approximately 70,000 were killed by the atomic bomb. Of the 230,000 people in Nagasaki on August 8, approximately 40,000 were killed.<sup>18</sup> Few casualty figures in history have set off a more contentious debate. In the years since World War II, the Japanese government has put forward figures which double the atomic bombing casualties and even triple the official American estimates for the total number killed by bombing during the 1944-1945 air campaign.

The Japanese government has developed official casualty figures for Hiroshima and Nagasaki based on a system of statistical samples and polls which have doubled the fatality figures for those cities. The official Japanese Ministries of Health and Welfare figures for Hiroshima now stand at 140,000 dead in Hiroshima and 70,000 dead in Nagasaki.<sup>19</sup> According to this accounting, more than half of the inhabitants of Hiroshima were killed and one third of Nagasaki's.

A dramatic increase also occurred in the Japanese official estimates of civilian casualties from the conventional air attacks mounted against Japan. Where the USSBS estimated that 210,000 Japanese had died in conventional bombing raids, the Japanese government now claims that 690,000 were killed in these raids—for a total of 900,000 total fatalities for the US bombing campaign against Japan.<sup>20</sup> These figures from the Ministries of Health and Welfare are, like the atomic bomb casualty figures, based on poll and sample techniques and not an actual enumeration. Indeed, as late as 1969 the Japanese government was counting recent deaths as fatalities from the atomic bombings.<sup>21</sup> While thousands of people certainly died of wounds and radiation poisoning shortly after the atomic raids, one wonders whether there should be a form of statute of limitations for counting casualties. After all, the brutalities and mistreatment inflicted upon hundreds of thousands of Allied POWs during the World War certainly shortened the lifespans of the prisoners who managed to survive Japanese captivity. Perhaps by using Japanese government casualty counting techniques the US and Allied powers could justify increasing their Pacific War casualty figures by 50% or more.

## **Japanese Motives.**

Since the end of World War II, there has been a consistent and concerted effort in Japan to evade the historical responsibility for atrocities committed during the period 1931-1945. Even the facts of Japanese aggression are glossed over or officially ignored. For example, the Japanese government is still reluctant to admit that thousands of “comfort women” from China, Korea and the Philippines were abducted and kept as slaves in Japanese military brothels. The Japanese Ministry of Education carefully censors all school history texts to expunge references to Japanese atrocities such as the Rape of Nanking in 1937. The Ministry of Education is unwilling to have the Japanese program of conquest during World War II labeled as an aggressive war.<sup>22</sup>

While ignoring and downplaying events such as mass murder in Nanking, mass murder of POWs, and diabolical chemical/biological warfare experiments that used humans as guinea pigs, the Japanese version of the Pacific War has emphasized Japan’s status as a victim. In a country where the history of the Pacific War is hardly mentioned, thousands of books and articles on the suffering of atomic bomb victims have been published.<sup>23</sup> Revised official estimates of the atomic bomb and conventional bombing casualties help Japan to maintain and foster its identity as a nation victimized by the World War.

The revised Japanese casualty figures have also served to support the views of revisionist American historians who argue that the ruthless strategy and tactics employed by the US Army and Navy in the Pacific War were largely motivated by the innate racism of the American people towards the Japanese. Two examples of popular historians of this school are Michael Sherry and his book *The Rise of American Air Power* (Yale

University Press 1987) and John Dower's *War Without Mercy: Race and Power in the Pacific War* (1986).<sup>24</sup>

In other cases, some commentators on aerial warfare have accepted and disseminated the revised Japanese casualty figures uncritically simply because they are the “official figures.”<sup>25</sup> Thanks to such an approach, the Japanese official figures have gained wide currency in the literature on World War II. However, the Japanese government methodology of compiling casualty figures by polls and statistical samples as opposed to the use of actual records by the US Strategic Bombing Survey ought to be examined more closely by historians. When two sets of fatality figures show more than half a million difference, something is clearly wrong with at least one set of figures. In any case, it is reasonable to be suspicious of the Japanese government figures due to the consistent attitude towards dealing with the unpleasant truths of World War II and its powerful motivation to inflate casualty figures to further the claim to “victim status” that has now become a national ideology.

### Notes

<sup>1</sup> Larry Bidinian, *The Combined Allied Bombing Offensive Against the German Civilians 1942-1945*. Coronado Press (1976), p.1.

<sup>2</sup> Ibid., p. 41.

<sup>3</sup> Ibid., pp. 42-43.

<sup>4</sup> George Quester, *Deterrence Before Hiroshima*, p. 122.

<sup>5</sup> Larry Bidinian, *The Combined Allied Bombing Offensive*, pp. 45-46.

<sup>6</sup> *The United States Strategic Bombing Survey. Summary Edition* (European War) (Pacific War). Maxwell AFB: Air University Press (reprint 1987), p. 84.

<sup>7</sup> For estimates of Japanese casualties, see *The United States Strategic Bombing Survey*, pp. 92-102.

<sup>8</sup> On casualties from the siege of Leningrad, see Harrison Salisbury, *The 900 Days*, NY: Avon Books (1969), pp. 591-594.

<sup>9</sup> Albert Kesselring, *The Memoirs of Field-Marshal Kesselring*, Novato, Calif.: Presidio Press (1989), pp. 55-58.

<sup>10</sup> Olaf Groehler, *Geschichte des Luftkrieges 1910 bis 1980*. Berlin: Militärverlag der DDR (1981), p. 242.

## Notes

<sup>11</sup> Richard Hough and Denis Richards, *The Battle of Britain*. NY: W.W. Norton and Co. (1989), p. 122.

<sup>12</sup> Olaf Groehler, *Geschichte des Luftkrieges*, p. 242.

<sup>13</sup> See Maj. James Sundermann, USAF, ed., *World War II in the Air: Europe*. NY: Franklin Watts (1963), pp. 8-9.

<sup>14</sup> For a good account of the Dresden raid, see Martin Middlebrook and Chris Everitt, *The Bomber Command War Diaries*, pp. 663-664.

<sup>15</sup> Conrad Crane, *Bombs, Cities and Civilians; American Airpower Strategy in World War II*. Lawrence: University Press of Kansas (1993), p. 115.

<sup>16</sup> David Irving, *The Destruction of Dresden*. NY: Ballantine Books (1965), pp. 186-189.

<sup>17</sup> For an example of this, see Larry Bidinian, *The Combined Allied Bombing Offensive*, p 51.

<sup>18</sup> USSBS, *Summary Report*, pp. 100-101.

<sup>19</sup> John Dower, "The Bombed: Hiroshimas and Nagasakis in Japanese Memory," in *Hiroshima: History and Memory*, ed. Michael Hogan. Cambridge University Press (1996), pp. 125-126.

<sup>20</sup> Michael Sherry, *The Rise of American Airpower: The Creation of Armageddon*. Yale University Press (1987), pp. 413-414, footnote 43.

<sup>21</sup> For the official figures on Japanese casualties in Hiroshima/Nagasaki, see John Dower, "The Bombed: Hiroshimas and Nagasakis in Japanese Memory," in *Hiroshima in History and Memory*, ed. Michael Hogan, Cambridge University Press (1996), p. 125.

<sup>22</sup> Editorial, "The Japanese People Continue to Wrestle With the Truth When it Comes to Their World War II Atrocities," *World War II Magazine* (February 1998), p. 6.

<sup>23</sup> John Dower, "The Bombed," pp. 116-141.

<sup>24</sup> Dower claims that American racism played a major role in the ferocious nature of World War II in the Pacific, arguing that the US deliberately sought to inflict heavy civilian casualties. See John Dower, *War Without Mercy: Race and Power in the Pacific War*. NY: Pantheon Books (1986), pp. 13-14.

<sup>25</sup> For an example of uncritical acceptance, see Robert Pape, *Bombing to Win*. Cornell University Press (1996), p. 104.

## **Chapter 3**

### **Casualty Perceptions from World War II to the Present**

The reporting of civilian casualties from aerial bombing in the era since World War II has witnessed most of the elements noted in the reporting of casualties in World War II. In general, the press has generally proven to have little knowledge about the conduct of military operations and has been ready to report the first available casualty figures with little fact checking—no matter how implausible the figures. Historians have also often been all too willing to repeat improbable official figures. In addition to these tendencies, the heavy casualties resulting from the bombing campaigns of World War II conditioned a postwar public to maintain the perception that aerial bombardment is an especially cruel form of warfare when civilians are concerned.

In the postwar era some new factors have entered into the equation. Most of the strategic bombing campaigns carried out since World War II have been conducted directly by the United States ( Korea, Vietnam, Gulf War ) or by American allies (El Salvador ). The Soviet bombing of Afghanistan in the 1970s and 1980s is the main exception to the popular identification of aerial warfare as an especially American phenomenon. Furthermore, this identification of strategic bombing as an especially American action has helped fuel the considerable anti-American sentiment in the world. While much of the anti-American sentiment during the Cold War era was openly

encouraged by the Communist nations, much of the anti-American feeling came from nations allied with the United States. Among the intellectuals and media of Western Europe as well as in the Third World since the 1960s a strong anti-American bias has been prevalent in the culture. The elite society of even closely allied democratic nations have commonly criticized the United States for most of its military actions and policies since the initiation of the Cold War. Such is certainly the price to be paid for being the world's premier military and economic power. However, it also has meant that any military action carried out by the United States has been and will continue to be judged very critically in Western Europe and the Third World. There is a large and well-prepared market for the worst possible stories about American military actions, and this has strongly influenced the reporting of civilian casualties in bombing campaigns carried out by America or America's allies.

### **The Vietnam War**

From 1965 to 1972, the US Air force and Navy conducted several bombing campaigns against strategic targets in North Vietnam. The US military attacked oil storage facilities, rail lines, bridges, depots, military barracks, airfields and naval bases.

By any reckoning, the Vietnam air campaign was one of the largest air campaigns in history. During the short Linebacker II campaign from 18-29 December 1972, the US Air Force and Navy aircraft dropped a total of 20,000 tons of bombs on strategic targets in the Hanoi and Haiphong regions.<sup>1</sup> Between 1965 and 1968 the Air force and Navy dropped 2.2 million tons of bombs on South Vietnam and 643,000 tons on North Vietnamese targets.<sup>2</sup> Basically, the US armed forces dropped more bomb tonnage on North Vietnam than it did on Germany or Japan during World War II.

Because of the high levels of criticism that the US government faced over its bombing policy in North Vietnam—strong criticism that came from allies as well as adversaries— the US government repeatedly ordered the US Navy and Air force to exercise the utmost care in avoiding civilian casualties in the bombing campaigns against military and industrial targets in North Vietnam. During the planning for the “Christmas bombing” campaign of 1972, the strategic directive for the operation insisted “ It is essential that strike forces exercise care in weapons selection to minimize civilian casualties.”<sup>3</sup> Indeed, the US government was so concerned about the political fallout resulting from even moderate civilian casualties that some of the more lucrative military targets of the Linebacker II campaign plan were dropped from the target list rather than inflict civilian losses.<sup>4</sup>

The contrast between the bomb tonnage dropped and casualties inflicted in the Vietnam War and in World War II is striking. In World War II, there were 1-2 civilian fatalities for every ton of bombs dropped on the enemy homeland. In Vietnam, there was one civilian fatality for every twelve tons of bombs dropped. The 3 1/2 years of the Rolling Thunder campaign killed an estimated 52,000 North Vietnamese civilians out of a total population of 18 million.<sup>5</sup> The 1972 bombing campaign killed between 1,400 and 4,000 North Vietnamese.<sup>6</sup> This is a surprisingly low casualty count considering the 660,000+ tons of bombs dropped and indicates that the targeting restrictions designed to minimize civilian casualties were carefully adhered to.

To this day, we still do not have a day by day, raid by raid, civilian casualty accounting from the North Vietnamese government so we remain reliant upon estimates and a few released official figures. There are, however, clear indications that the North



Vietnamese deliberately inflated the civilian casualty figures from US bombing raids and released them to the world news media in order to fuel anti-American sentiment. The famous journalist/historian Harrison Salisbury visited Hanoi in December 1966 and was told by the North Vietnamese military that a December 13 US air attack upon a nearby vehicle depot had “not been impressive” and had only resulted in 9 killed and 21 wounded. At the same time, Hanoi Radio and the North Vietnamese Foreign Ministry announced to the world that the aforementioned raid had blatantly targeted innocent civilians and had caused heavy civilian casualties.<sup>7</sup>

Plausible or not, the North Vietnamese propaganda campaign that characterized the American air campaign as targeting civilians and inflicting heavy civilian casualties was remarkably successful throughout the world. Student and leftist demonstrations throughout American universities and in Western Europe repeatedly emphasized the barbaric nature of the US bombing campaigns.<sup>8</sup> It wasn't just the radical fringe of the universities that criticized the United States bombing program - many of the prestige national newspapers joined in. The New York Times condemned the Christmas bombing of Hanoi in 1972 as inhumane.<sup>9</sup> In Europe, the mainstream press relentlessly criticized the American bombing of North Vietnam. Germany's prestigious *Die Zeit* newspaper remarked that “even allies must call this a crime against humanity.”<sup>10</sup>

In Vietnam there was a combination of an opponent very adept in developing a propaganda campaign and a European and American- intellectual culture of anti-Americanism that resulted in the portrayal of American bombing as ruthlessly brutal towards civilians. The perception of American cruelty against civilians was one of the factors that helped whip up anti- US sentiment throughout the world and pushed even the

staunchest allies to avoid even the appearance of political support for US actions in Southeast Asia. Despite the evidence that the US worked very hard, and very successfully to minimize civilian casualties, America lost the propaganda war.

### **El Salvador 1980-1992**

From 1980 to 1992 the small nation of El Salvador was engaged in one of the most savage civil wars ever seen in this hemisphere. at the time that the war erupted, El Salvador had experienced five decades of corrupt, military-dominated governments and was ripe for a revolution. The example of a successful leftist revolution in nearby Nicaragua in 1979 encouraged the assorted leftist and Marxist dissidents in El Salvador to band together into one common front, the FMLN, and initiate a revolutionary war in 1980.<sup>11</sup>

The civil war lasted for 12 years and resulted in an estimated 100,000 deaths, a horrendous total for a nation of only five million people. The US, viewing Central America in the context of the Cold War and rightfully fearful of another American domino falling to forces friendly to Cuba and the Soviet Union poured in significant military and economic aid to bolster the Salvadoran government. The US government, understanding the need for fundamental change in El Salvador, energetically and successfully pushed the Salvadoran government to adopt land reform for the peasants and democratic and electoral reforms for the whole nation while the rearmed and enlarged Salvadoran armed forces fought the rebels to a standstill. The conflict was finally ended with the Chapultepec Accords signed in 1992 in which both the rebels and the government made major concessions. The FMLN rebels accepted demobilization and turning their military movement legitimate political party. The government reduced the

armed forces, created a new civilian police force and guaranteed a fair and reformed electoral and political system.

Although the war was between different Salvadoran factions, the world press saw it largely in terms of Cold War politics with the El Salvador government acting as protégés and proxies of the US versus the Communist supported FMLN forces. Indeed, the image of the Salvadoran armed forces as American proxies is not unfair. The Salvadoran armed forces were trained by US advisors and training teams ( as many as 150 US advisors were in the country at any time ) and the US provided more than a billion dollars in military aid and equipment to the Salvadoran forces during the course of the war.<sup>12</sup> The small Salvadoran Air Force ( *Fuerza Aerea Salvadoreña*—FAS ) received a disproportionate share of the US military aid with approximately a quarter of all military funds.<sup>13</sup> The US provided El Salvador with more than 100 aircraft including A-37 fighter-bombers, AC-47 gunships and UH-1M helicopter gunships. In the first half of 1982 alone, the US sent 6 A-37Bs and \$2 million in aerial munitions to the FAS.<sup>14</sup> For the whole course of the war the FAS was almost completely dependent upon the US for training, aircraft, spare parts and munitions. In such a circumstance, the US was bound to be held responsible for the actions of the Salvadoran Air Force.

### **The FAS Bombing Policy**

One of the most controversial aspects of the El Salvador war was the bombing campaign conducted by the FAS against the rebel strongholds located in the mountains of Eastern and Central El Salvador. For the first five years of the war the army was incapable of taking on the rebels in the mountainous rural areas so the FAS took to bombing the mountain strongholds of the FMLN with their fighter bombers and other

attack aircraft in order to keep the rebels under constant pressure. Between 1981 and 1986 when the areas were brought under government control, the rebel-held villages, especially in the Chaletenango and Guazapa regions, were pounded by American-supplied A-37s armed with American bombs and munitions.

In the eyes of the world press, the US was held responsible for the El Salvadoran bombing campaign. Numerous books and articles documenting the cruelty of the Salvadoran government and armed forces appeared along with a library of literature attacking the US policy of aid to El Salvador. The bombing campaign was given special mention and the US strongly criticized.<sup>15</sup> American reporters even traveled to the hinterlands of El Salvador and lived with the rebels and filed first-hand accounts of the FAS bombing raids against rebel villages.<sup>16</sup> The FAS bombing campaign became a cause celebre for the American and international left in this era and something of a public relations disaster for the US. At the same time that the US State department was trying to minimize the role of aerial bombardment in the civil war, senior Salvadoran military commanders openly discussed their bombing program with the Western media. In 1985, Colonel Ochoa, the commander in the Chaletenango department of El Salvador and almost a caricature of the ruthless Central American soldier told the US press that he had declared a dozen free fire zones in his region and that in those areas he would bomb anything that moved.<sup>17</sup> Accounts such as this helped focus the attention of the critics of the US policy on El Salvador upon the armed forces bombing policy. The accounts of the civilian casualties inflicted by the bombing campaign became an important propaganda weapon in the hands of the rebels. A variety of casualty figures were put out by the FMLN and their sympathizers concerning the bombing campaign. The Mayor of

Berkeley California testified before the Congress that 60,000 Salvadoran civilians had been killed by the governments bombing campaign by 1986.<sup>18</sup>

How many civilians were, in fact, probably killed in the bombing campaigns from 1981-1986? The most accurate and objective source for the casualty figures of the war is the El Salvador Catholic Church civil rights office, Tutela Legal. This organization carefully collected testimony and information about casualties and human rights abuses generated by both sides of the conflict and worked hard to verify details and to include the names of those killed and wounded as well as the nature and cause of the wounds. Tutela Legal estimated that in 1985, a year that saw especially heavy aerial bombing, a total of 371 civilians were killed by government air attacks.<sup>19</sup> Since the bombing campaign was conducted over a six year period, 1981-1986 , an estimate of total civilian fatalities from air bombardment of approximately 2,000 would seem reasonable if, in a year of heavy fighting, 371 had been killed.

Certainly most aspects of the reality of the air campaign differed greatly from the version of events presented by the critics of US policy. Some American reporters who visited the rural areas under attack noted that the villagers build effective bomb shelters, had learned to camouflage their homes and activities and were expert in taking cover when government aircraft approached. Such measures largely nullified the government's bombing efforts. Bombing attacks witnessed by American reporters produced the occasional one or two casualties, but rarely were any heavy losses noted.<sup>20</sup>

For the meager results gained by the FAS in the bombing campaign, the FMLN was able to make some strong international propaganda points by emphasizing the suffering of civilians under air bombardment. General Fred Woerner ( Ret.), Commander of

Southcom during much of the war, remarked that the minor advantages gained by the government were more than offset by the FMLN propaganda claims. In Woerner's opinion, the effect of the bombing campaign was counterproductive as it gained widespread international sympathy for the rebels.<sup>21</sup>

## **The Gulf War**

From the 1960s through the 1980s, during the international debates about Cold War armament levels, a significant community of pacifism had evolved in Western Europe and the United States. The pacifists, who tended to be leftist in their politics and automatically suspicious of US policy, had a great deal of influence within the Christian churches and the intellectual community. Essentially, many church activists came to view almost any form of war as immoral—especially aerial bombardment. By the time of the Gulf War many of the religious thinkers were ready to condemn all forms of aerial bombardment as necessarily immoral because noncombatant casualties invariably resulted from bombing raids.

After Iraq invaded Kuwait in 1990 and the US and coalition allies sent troops to the Gulf to prepare a campaign to evict the Iraqis, many on the left, especially intellectuals writing from a Christian moral perspective, were ready to condemn proposed military action against Iraq. One justification for this view was the perception that aerial bombardment caused excessive civilian casualties and was thus inherently immoral. An editorial in the influential Catholic journal *La Civiltà Cattolica* was translated and published widely in the US in late 1990 before the Gulf War air campaign began. *La Civiltà Cattolica* argued that the nature of war had fundamentally changed and that noncombatant immunity was a thing of the past. It concluded that “war today, except in

the case of defending oneself from grave aggression underway, is morally unacceptable, whatever the reasons given for its justification.”<sup>22</sup>

This was not an isolated position but rather one widely held throughout the world intellectual community. The US political leaders and military were well-aware of such sentiments (the military had put up with mass demonstrations and press denunciations for stationing Pershing and cruise missiles in Europe in the 1980s) and worked to craft a plan against Iraq that would minimize civilian casualties and hardship. The initial US air campaign plan, outlined in August 1990 had as one of its four strategic objectives “minimize casualties and collateral damage.”<sup>23</sup> As the strategic air plan was developed, the US Air Force sought to limit damage to power systems and fuel systems in order to facilitate speedy postwar repairs and normalization of the Iraqi economy. The air plan did not call for bombing the generation plants or oil refineries but rather the oil distillation towers and the power grid controls. Indeed, the plan worked. While shutting down Iraqi electrical production and oil production during the war, by mid-1992 Iraq had recovered much of its electrical generating capacity and by October 1992 was again exporting finished petroleum products.<sup>24</sup>

The Gulf War air campaign plan of January 1991 to March 1991 was the most extensive effort in military history to limit civilian casualties. Sometimes, however, the plan failed. On 13 February the Al Firdos command bunker in Baghdad was bombed by the US Air Force. The Air Force had been unaware that the bunker was also used as a shelter by Iraqi civilians. Over 100 civilians were killed by the bombing. In order to avoid a recurrence of such civilian losses, the number of targets in Baghdad was cut back

and all further bombing of targets were to be personally reviewed by General Schwarzkopf.<sup>25</sup>

### **Casualty Figures**

During the course of the Gulf War a total of 88,500 tons of bombs were dropped on Iraq and occupied Kuwait.<sup>26</sup> There are no reliable figures for the number of civilian fatalities from the aerial bombing campaign. The estimates for the civilian deaths from bombing range from a US Defense Department number of approximately 1,000 civilians killed by bombing in the course of the war<sup>27</sup> to over 114,000 civilians who died either directly from the bombing during the war or from health effects attributable to bombing in the postwar period.<sup>28</sup> Former US Attorney General Ramsey Clark estimated that 25,000 Iraqi civilians had died from the bombing during the war and another 25,000 had died from the indirect effects of the bombing ( lack of water, power, closed hospitals etc.).<sup>29</sup> The Mideast Watch provided an estimate of 5-15,000 civilian casualties from the bombing campaign and, while Iraqi sources provided a figure of 50,000 civilians killed by coalition bombing.<sup>30</sup> The previously-mentioned journal, *La Civiltà Cattolica*, stated after the war that 30,000 Iraqi civilians had been killed by aerial bombardment with “practically complete destruction of the country’s infrastructure ( roads, bridges, irrigation systems and so forth) and of its industrial and economic fabric.”<sup>31</sup> In short, many of those who could be counted on to argue that aerial bombing was inherently cruel could find some evidence to back up their position. However, the careful monitoring of the air campaign and the careful efforts of the US and coalition air forces to use precision munitions in built-up areas all suggest the validity of the estimates of civilian deaths at the very low end of the scale, perhaps 1,000 to 2,000 killed by aerial bombardment.



Many of the very high claims for civilian casualties are based on counting deaths from a lack of services. People in hospitals might die if electric power is cut off. The loss of power prevents the pumping of clean water and thus people die from intestinal parasites and so on. Of course, the failure to quickly restore electric power in some areas of Iraq was less likely to be the result of massive bomb damage to the national infrastructure but rather a deliberate attempt by Saddam Hussein to cut off services in the Kurdish areas in the north of Iraq and the Shiite communities in the south that had rebelled against his regime in the postwar upheaval. There are estimates as high as 30,000 civilian deaths caused by Saddam Hussein's direct suppression of his own people during the postwar turmoil. (These fatalities are also added to the "war deaths").<sup>32</sup> Ironically, this method of counting casualties works very much to Saddam Hussein's advantage in the ongoing propaganda war. The Hussein regime wins in two ways. By this method of casualty calculation, they get to kill large numbers of their internal opposition —something that the Iraqi government has done before – and then claim the resulting casualties as the victims of allied air bombardment and sanctions. This further bolsters Iraqi claims of "victim" status. Many European and American commentators and activists have been ready and willing to accord Saddam Hussein this status.

### **Casualties as Propaganda**

During the Gulf War the Iraqi government made a great effort to convince the media that civilians were being deliberately targeted by the coalition air campaign. Journalists were taken to a destroyed factory and told that it was a "Baby Milk Factory" and showed a crudely printed sign in English proclaiming the fact.<sup>33</sup> Journalists also were taken to supposed "schools" that had been bombed and blackboards were found in the rubble to

illustrate the scholastic nature of the building.<sup>34</sup> The Iraqi government described the bombing of the Al Firdos bunker as a “criminal, premeditated, preplanned attack.”<sup>35</sup> Given the nature of the Iraqi regime and the crudity of most of its propaganda efforts, most of the Western journalists were skeptical of the “proof” that civilians were being targeted that were offered by Saddam Hussein’s government.

During the war the Iraqis released an official film entitled “ They Murder Children” that featured graphic footage of dead, badly maimed and terribly burned children. The film played extensively in the Arab world but not in the West, as Western journalists could not determine whether the footage was from the Iraq-Iran war of the 1980s or whether the shots of dead children came from the Iraqi gassing of Kurdish villages.<sup>36</sup> In any case, such propaganda was geared to gain sympathy in the Arab world and had some success. Large demonstrations against the United States air campaign were mounted in Jordan, Tunisia and Algeria.<sup>37</sup> Just as many people in occupied Europe during World War II were inclined to accept even the crudest anti-Semitic Nazi propaganda, many in the Arab and Third World countries were ready to accept the charge that the US was conducting a genocidal air campaign against the Iraqi people. Indeed, there were more than a few people in the West ready to accept Iraqi claims at face value. Ramsey Clark denounced the heavy casualties caused by the “American bombardment of civilian institutions and hospitals.”<sup>38</sup>

The Iraqi government allowed sympathetic researches into Iraq to establish its case that civilians had been ruthlessly targeted during the war. One team was composed of three women, two of them Jordanians, whose research methodology left much to be desired. However, this did not prevent their work from being published in the United

States. The three researchers interviewed a sample of 80 Iraqi women in order to determine the psychological stresses inflicted by the war. The tendency of lumping together different causes for war casualties and suffering is evident in the researchers' approach. They reported that 47% of the interviewees had left their homes for the provinces or cities fearing bomb attacks *or other forms of war violence.*" ( Italics by author ).<sup>39</sup> While the researchers emphasis is on the suffering caused by bombing, the statistic (if true) may also indicate that most of the civilian suffering was caused by Saddam Hussein' postwar repression of his own people and not by the bombing campaign. Indeed, contrary to the Arab researchers, there is no evidence that Iraqis fled the cities to get away from US and coalition air bombardment.

### **The Media and Reporting Casualties**

The media in the United States was already conditioned to expect that aerial bombardment was likely to produce heavy enemy casualties, both military and civilian. There was considerable sensationalization of the famous "Highway of Death" outside of Kuwait City where, during the ground campaign, US aircraft destroyed numerous vehicles caught exiting Kuwait. The reporting of the event was carried out in a macabre tone by even the most prestigious newspapers. The Washington Post reported " As far as the eye can see along the road to Iraq lies a tangled sea of scorched, twisted metal littered with the bodies of Iraqi soldiers."<sup>40</sup> Despite the sensationalized tone of the reporting, the "Highway of Death" consisted of one mile of highway where stalled vehicles had been destroyed. In the landscape "littered with the bodies of Iraqi soldiers" only 46 bodies were found.<sup>41</sup> In fact, when the vehicles got caught in the traffic jam on the highway,

most of the drivers and riders simply abandoned their vehicles and took off for Iraq on foot, leaving the Air Force to destroy equipment rather than people.

The yellow press from the front encouraged similar exaggeration at home as some in the media accused the Air Force of conducting an inhumane war against civilians. Columnist Colman McCarthy of the *Washington Post* wrote a piece on the air war entitled “The Coward’s Air War” in which he referred to the Al Firdos bunker bombing: “Scores of noncombatants – women and children – were slaughtered.” The column also asserted that “ picking off buses of poor people on desert highways shows the US military at its most contemptible.” Finally, the columnist argued that the cruelty of the air war was in the tradition of the brutal nature of the American military. “ The sadistic ritual of daily bombing by the US military is in keeping with its policy of picking fights.”<sup>42</sup>

Indeed, one result of the sensationalized versions of the bombing during the Gulf War and such events as the “Highway of Death” is that some commentators came to the conclusion that aerial warfare is fundamentally immoral because it inflicts needless casualties among armed enemy soldiers. One theologian wrote after the war “ It tells us that the pounding of the ill-armed, ill-clad, and ill-fed Iraqi soldiers was without mercy. It tells us that the carnage of the “Highway of death’, as desperate Iraqis were relentlessly bombed and strafed... was not a fight in *jus in bello* standards but a massacre.”<sup>43</sup>

### Notes

<sup>1</sup> Mark Clodfelter, *The Limits of Airpower*, NY: The Free Press (1989), pp. 194-195.

<sup>2</sup> Ibid., p. 129.

<sup>3</sup> Ibid., p. 164.

<sup>4</sup> Ibid., p. 190.

<sup>5</sup> Ibid., p. 136.

## Notes

<sup>6</sup> Timothy Lomperis, *The War Everyone Lost—And Won*, Washington DC: Congressional Quarterly Press (1984), p 93.

<sup>7</sup> Harrison Salisbury, *Behind the Lines—Hanoi*, NY: Harper and Row (1967), pp. 86-91.

<sup>8</sup> The author, who lived in Europe during the early 1970s and studied at Heidelberg University, Germany 1974-1975, recalls the almost daily large-scale demonstrations in the European universities that invariably featured lurid accounts of “genocidal” American bombing.

<sup>9</sup> Editorial, “Terror Bombing in the Name of Peace.” *New York Times* (26 Dec. 1972).

<sup>10</sup> See “Outrage and Relief,” *Time Magazine* (8 Jan. 1993), p. 14.

<sup>11</sup> A good overview of the war is found in Benjamin Schwarz, *American Counterinsurgency Doctrine and El Salvador*, Rand Study (1992), p. 2.

<sup>12</sup> *Ibid.*, p. 2.

<sup>13</sup> Charles Lane, “The Pilot Shark of El Salvador,” in *New Republic* (24 Sept. 1990), p. 27.

<sup>14</sup> History of the Directorate of International Programs, 1 Jan 1982 - 30 June 1982. USAF HRA Doc. K. 145.01, pp. 5-6.

<sup>15</sup> The El Salvador War generated a considerable literature describing the FAS bombing of civilians. See Charles Clements, M.D., *Witness to War: An American Doctor in El Salvador*, NY: Bantam Books (1984). See also Joe Fish and Christina Sganga, *El Salvador: Testament of Terror*, NY: Olive Branch Press (1989).

<sup>16</sup> See the series, “El Salvador’s Guerrillas,” in *Washington Post* (7-8 Nov. 1985).

<sup>17</sup> *Dallas Morning News* (21 Jan. 1985).

<sup>18</sup> Gus Newport, Mayor of Berkeley, Committee of Foreign Affairs, House of Representatives, *Congressional Record* (14 May 1986), pp. 17, 20-21.

<sup>19</sup> *Congressional Record* (14 May 1986), p 121.

<sup>20</sup> “El Salvador’s Guerrillas,” *Washington Post* (7-8 Nov. 1985).

<sup>21</sup> Interview with General Fred Woerner (Ret.), Former CINC Southcom (19 Jan. 1998).

<sup>22</sup> See George Weigel, “War, Peace and the Christian Conscience,” in *Just War and the Gulf War*, eds. James Johnson and George Weigel. Washington: Ethics and Public Policy Center (1991), p 63.

<sup>23</sup> Richard Davis, *Decisive Force: Strategic Bombing and the Gulf War*, Washington, DC: Air Force History Office (1996), p. 16.

<sup>24</sup> *Ibid.*, pp. 54-55.

<sup>25</sup> Thomas Keaney and Eliot Cohen, *Gulf War Air Power Survey: Summary Report*, Washington, DC (1993), pp. 68-69.

<sup>26</sup> (foot Taylor p 220 )

<sup>27</sup> Richard Davis, *Decisive Force*, pp. 72-73.

<sup>28</sup> Interview with Beth Daponte in *Hidden Casualties*, eds. Saul Bloom, John Miller, James Warner and Phillipa Winkler, Berkeley, Calif.: North Atlantic Books (1994), pp. 182-188, esp. p. 186.

<sup>29</sup> *Ibid.*, p. 182.

## Notes

<sup>30</sup> Bill Arkin, Damian Durant, and Maryan Cherni, *On Impact: Modern Warfare and the Environment*, London: Greenpeace (May 1991).

<sup>31</sup> Editorial in *La Civiltà Cattolica*, cited in *But Was it Just? Reflections on the Morality of the Persian Gulf War*, ed. David Decosse, NY: Doubleday (1992), p. 110.

<sup>32</sup> *Hidden Casualties*, p. 186.

<sup>33</sup> Philip Taylor, *War and the Media: Propaganda and Persuasion in the Gulf War*, Manchester University Press (1992), p. 89.

<sup>34</sup> *Ibid.*, pp. 121-122.

<sup>35</sup> *Ibid.*, p. 192.

<sup>36</sup> *Ibid.*, pp. 119-120.

<sup>37</sup> *Ibid.*, pp. 210-211.

<sup>38</sup> Philip Taylor, *War and the Media*, p. 210.

<sup>39</sup> Bela Bhatia, Mary Kavar and Miriam Shahin, "Unheard Voices: Iraqi Women on War and Sanctions," in *Hidden Casualties*, pp. 207-223.

<sup>40</sup> Cited in John Mueller, *Policy and Opinion in the Gulf War*, Chicago and London: University of Chicago Press (1994), p. 135.

<sup>41</sup> *Ibid.*

<sup>42</sup> Colman McCarthy, "The Coward's Air War," *Washington Post*. See *The Gulf War Reader*, eds. Micah Sifry and Christopher Cerf, NY: New York Times Books (1991), pp. 334-336.

<sup>43</sup> Jean Bethke Elshtain, "Just War as Politics," in *But Was it Just? Reflections on the Morality of the Persian Gulf War*, ed. David Decosse, NY: Doubleday (1992), p. 53.

## **Chapter 4**

### **Conclusion**

From Guernica to the Gulf War overestimating the civilian casualties from aerial bombardment has been a fairly consistent aspect of modern warfare. Part of the problem is the common perception held by the media and the public that aerial bombardment is far more destructive than it actually is. One sees the photos of the ruins of Dresden and Hamburg or Coventry and Hiroshima in ruins and wonders how anyone could have lived through the bombing. Yet, most of the population did survive and postwar research has revised the estimates of civilian casualties dramatically downward. The revisions, however, receive little notice and most of the academic and media community prefer the more dramatic accounts and figures of aerial bombing.

An important part of this equation is the media. In the 1890s the major American newspapers covering the Spanish colonial war in Cuba found that stories of blood and gore sold a lot more papers. Even better were stories about the slaughter of innocent women and children. Scarcely-credible rumors and stories of Spanish massacres were repeated without being checked and splashed across the front pages for a breathless public. When the best of the bloodthirsty stories proved to be falsehoods concocted by the freedom fighters for propaganda effect, there was little effort by the newspapers to correct the story.<sup>1</sup> In our present age, blood and gore—especially stories of the slaughter

of the innocents—continue to excite the public and get top ratings on the evening news. The behavior of the press reporting the “Highway of Death” and the “landscape littered with bodies” (actually less than fifty dead) in 1990 was little different from the media style of their ancestors in the 1890s. From the Guernica, to Rotterdam to Vietnam and the Gulf War, the press has shown little inclination to express a skeptical attitude towards extreme and implausible casualty claims.

Historians have not fared much better than the press in an attempt to get the story straight. There is a reverence for the “official figures” among many airpower and military historians that has allowed very questionable casualty figures to pass unchallenged. The air raid against Guernica in 1937 was one of the most studied and publicized aerial bombardments in history. However, few historians have questioned the official Basque casualty figures. In November 1936, the Luftwaffe made some raids on Madrid in which 30-40 tons of bombs killed slightly more than 200 people. In March 1937, the Luftwaffe bombed Durango, Spain with 30-40 tons of bombs and killed 250. The same aircraft dropping 30-40 tons of the same type bombs attacked Guernica in April 1937, yet few in the media or academic community have ever thought to ask why the same intensity of attack as Madrid and Durango supposedly killed 1,654 people -- eight times the bomb to casualty ratio as in the other air attacks upon urban areas in this war.

In any case, there is a clear propaganda advantage in attaining the status of victimhood—all the more so when one can also claim that the enemy is an aggressor ready and willing to kill large numbers of women and children. While dictatorships of the twentieth century have made a common practice of the making exaggerated or phony claims of war atrocities against their enemies, democracies are not especially immune



from fudging the official figures. When a nation is fighting for survival, as the Dutch were in 1940, a patriot might certainly make exaggerated casualty claims if such claims might encourage others to rush aid to his nation. Indeed, it was the democratic Dutch government that published the claim that 30,000 civilians had been slaughtered by German bombing of Rotterdam in the immediate aftermath of the raid. Emotions run high at such times. However, it does not excuse the historian decades later who still uses the propaganda figure of Rotterdam rather than the corrected figure of 900 dead. It is the sloppiness of the historical method of many in the academic community that helps maintain some of the myths about air power. The Japanese government ministries have created a national myth of Japanese victimhood by quietly doubling the casualty estimates from the atomic bombings of Hiroshima and Nagasaki and deftly deflected study of the much greater and more violent mass murder perpetrated by the Japanese in Nanking and China in the 1930s. The Japanese official count of casualties from American bombing, based on polls, projections and demographic assumptions that strain credulity, have led to a tripling of the estimated fatalities between 1950 and today. Yet, few historians have been willing to question how the very thorough and extensive data collection projects of the US Strategic Bombing Survey of the 1940s could have been so incredibly inaccurate in their much lower casualty estimates.

The advantage of the propagandist desiring to prove that America is a ruthless, bullying nation that readily uses aerial bombardment to inflict death and suffering upon innocent non-combatants is that there are so many people in the world that are inclined to believe just that. In short, many in the Third World don't need much proof at all to accept the view that America practices genocide by bombing as part of its national

policy. Even the crudest propaganda by Saddam Hussein during the Gulf War found a ready audience in much of the Arab world.

Even within the far more sophisticated community of intellectuals and academics in America and Western Europe, one can often find a virulent strain of anti-Americanism that readily accepts claims that America deliberately targets women and children in aerial bombing campaigns. One needs only the example of Ramsey Clark and some of the columnists for the *New York Times* and *Washington Post* at the time of the Gulf War to see an inclination to believe the worst of the US armed forces. At the same time, a large pacifist community in Europe and the United States are similarly-inclined to accept any proof that aerial bombardment is immoral and invariably causes excessive casualties.

Essentially, there is little that can be done to change the widespread perception that aerial bombardment necessarily causes vast numbers of civilian casualties and is probably the cruelest and bloodiest form of war in the suffering it inflicts upon civilians. The cultural, historical and political biases all work against the US Air Force in this regard. Unfortunately, current and future dictators who oppose the United States will be aware of the attitudes concerning civilian casualties caused by aerial bombardment and will probably make good use of this time-honored theme in any anti-US propaganda campaign. A dictator who is ruthless enough will not just make exaggerated claims about civilian casualties in a future conflict with the US, he will ensure that his propaganda is credible by ensuring that there are plenty of killed and maimed civilians available to show the world media. Indeed, for such propaganda to succeed, such a dictator ( and Saddam Hussein comes to mind ) would also have to ensure that plenty of women and children were included among those killed by aerial bombing.

In a future conflict against a ruthless regime, one can expect a few tactics such as putting military command and control centers or heavy equipment such as tanks and helicopters in civilian neighborhoods. If the US Air Force wishes to knock out a military target, it will have to bomb the school or hospital that the troops or headquarters have been stationed in. During the war alert over Iraq's refusal to allow inspection of its chemical and biological warfare facilities in early 1998, hundreds of Iraqi families "volunteered" to live in the dictator's palaces as civilian hostages in case the US Air Force bombed the presidential facilities or command centers. Considering his record of suppression of his own people, the loss of a few hundred peasants is not likely to bother Saddam Hussein. Indeed, in a future confrontation with the United States Air Force, Saddam Hussein or a dictator like him, might find it very advantageous to round up his political enemies and their families and imprison them in and around the most vital military facilities. If the US Air Force attacks a legitimate military target, the dictator can get a double benefit. He can gain a propaganda victory by showing the world media piles of killed and maimed women, children and civilians and he also gets to save on the price of bullets for people he was going to execute anyway.

Unfortunately, there are no evident solutions to dealing with the common perception that aerial bombardment causes heavy civilian casualties. This cultural trait has been exploited as a powerful propaganda weapon against the United States in the past and one can guarantee that it will be used in the future, possibly in a more systematic and ruthless way with an opponent actually ensuring the heaviest possible casualty count. In any case, the United States Air Force will have to take into account the propaganda effect of

civilian casualties caused by aerial bombing campaigns as an important factor in future warfighting doctrines.

### Notes

<sup>1</sup> On American press behavior in the 1890s, see Marcus Wilkerson, *Public Opinion and the Spanish-American War: A Study in War Propaganda*, NY (1932), and Charles Brown, *The Correspondents' War: Journalists in the Spanish- American War*, NY: Charles Scribners' Sons (1967).

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